

## REMARKS

This Amendment is in response to the Final Office Action dated March 27, 2009. The Examiner has rejected claims 1-23. Claim 1 is amended. Claims 1-23 are currently pending. Reconsideration is respectfully requested in light of the following remarks.

### ***Claim Rejections under 35 U.S.C. § 102***

Claims 1-3, 7, 8, 10, 11, 15, and 21 under U.S.C. § 102(b) based on Kermani, U.S. Patent No. 6,895,514.

Claim 1 is directed to a method for determining the accuracy of keystroke entries of a string entered into a field by a keyboard. Claim 1 recites the step of assigning a score to succeeding keystrokes after  $k_1$  based upon the time independent location of the keystroke in relation to another keystroke without regard to an amount of time associated with entering the keystrokes. Independent claims 10, 15, and 21 recite similar limitations. Claim 1 also requires comparing a normalized, string score to a predetermined value of normalized string scores to determine the likelihood that the keystroke entries are accurate, wherein the predetermined value is not based on previously stored keystroke sequences.

Kermani fails to teach all claim elements. Kermani discloses a system that compares “the character sequence of the just entered password as well as the keystroke timing to one or more stored password models” (col. 2, lines 43-45). Kermani does not disclose assigning a score to succeeding keystrokes after  $k_1$  based upon the time independent location of the keystroke in relation to another keystroke without regard to an amount of time associated with entering the keystrokes, as recited in claim 1. By contrast, Kermani focusing on keystroke timing. In fact, Kermani discloses a “distance” that is “calculated as the difference between the *time lapse* between the two adjacent characters as entered by the user minus the *mean time lapse* of the model divided by the sum of the mean and the standard deviation for that character” in order to help determine the *timing score*. In response to Office Action paragraph 9, starting on page 14, Applicant respectfully points out that the aspects of “time independence” and “without regard to an amount of time associated with entering the keystrokes” are recited in independent claims 1, 10, 15, and 21.

Kermani also fails to teach comparing a normalized, string score to a predetermined value of normalized string scores to determine the likelihood that the keystroke entries are accurate, wherein the predetermined value is not based on previously stored keystroke sequences. Kermani compares a just entered password with one or more stored password models. A password model, including character sequence and keystroke sequence timing, is recorded and used to restrict access based on the authorized user's password character sequence and typing habits (col. 5, lines 4-8). Kermani requires the use of a training session to create a password model that is used as a basis of comparison for subsequent password entries. In fact, Kermani emphasizes the need for a training session by stating that "the typing habit is a learned parameter and this information can only be gathered via a plurality of training sessions" (col. 7, lines 12-15). Thus, Kermani does not disclose comparing a normalized, string score to a predetermined value that is not based on previously stored keystroke sequences, as required by claim 1.

Since independent claims 1, 10, 15 and 21 are patentable in view of Kermani, the related dependent claims 2, 3, 7, 8, and 11, which recite additional limitations, are also patentable. Withdrawal of this rejection is respectfully requested.

***Claim Rejections under 35 U.S.C. § 103***

Claims 4-6, 9, 16, 17, 20, and 23 are rejected under U.S.C. § 103(a) based on Kermani, U.S. Patent No. 6,895,514 in view of Brown, U.S. Patent No. 5,557,686.

Brown is cited for disclosing a method to determine a similarity between samples (col. 5, lines 28-30). However, Brown does not compensate for the deficiency of Kermani. Nothing in Brown teaches or suggests assigning a score to succeeding keystrokes after  $k_1$  based upon the time independent location of the keystroke in relation to another keystroke without regard to an amount of time associated with entering the keystrokes. Instead, Brown discloses "[u]sing *timing* characteristics of the keystrokes of the collected samples based on key press times and key release times" (col. 2, lines 17-19) (emphasis added).

Additionally, nothing in the cited disclosure of Brown teaches or suggests comparing a normalized, string score to a predetermined value of normalized string scores to determine the likelihood that the keystroke entries are accurate, wherein the predetermined value is not based

on previously stored keystroke sequences. By contrast, Brown discloses a process for analyzing keystroking patterns of an authorized user and imposter training samples to determine if a new sample is from an authorized user or an imposter (col. 3, lines 30-33). In Brown, user training samples are created by having an authorized user type a short series of characters which can be a password, name, both a password and name, or any other series of keystrokes (col. 3, lines 34-37).

Because independent claims 1, 10, 15, and 21 are patentable in view of Kermani and Brown, so are related dependent claims 4-6, 9, 16, 17, 20, and 23. Applicant respectfully requests withdrawal of this rejection.

Claims 12-14, 18, 19, and 22 are rejected under U.S.C. § 103(a) based on Kermani, U.S. Patent No. 6,895,514 in view of Brown, U.S. Patent No. 5,557,686 and in further view of Kroll, U.S. Patent No. 6,405,922.

Kroll is cited for disclosing that rejected signatures entered into an ATM are stored for later analysis (col. 4, lines 47-55). This reference in combination with Kermani and Brown does not raise a *prima facie* case of obviousness. Kroll discloses generating a keyboard signature on an ATM, which may include *duration* of key depression, keyboard *timing*, and or *time* vectors (col. 2, lines 13-19; col. 3, line 49; col. 6 lines 40-42) (emphases added). Thus, the combination of Kermani, Brown, and Kroll fails to disclose or even suggest assigning a score to succeeding keystrokes after  $k_1$  based upon the time independent location of the keystroke in relation to another keystroke without regard to an amount of time associated with entering the keystrokes, as required by the independent claims.

The combination of Kermani, Brown, and Kroll also fails to hint at or suggest comparing a normalized, string score to a predetermined value of normalized string scores to determine the likelihood that the keystroke entries are accurate, wherein the predetermined value is not based on previously stored keystroke sequence. Instead, Kroll is directed to a method of analyzing a keystroke signature of a customer, where the signature is compared to a database of previously stored keystroke sequences to allow for a statistical test for the identity of the user (Abstract).

Accordingly, Applicant contends that related dependent claims 12-14, 18, 19, and 22 are allowable, and respectfully requests that this rejection be withdrawn.

**CONCLUSION**

In light of the remarks set forth above, Applicant believes that the present application is in form for allowance, and such action is respectfully requested. Should the Examiner have any question, the Examiner is encouraged to telephone the undersigned.

The Commissioner is authorized to charge any additional fees which may be required, including petition fees and extension of time fees, to Deposit Account No. 23-2415 (Docket No. 31718-706.201).

Respectfully submitted,

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By:   
Elaine Kim, Reg. No. 57,613

WILSON SONSINI GOODRICH & ROSATI  
650 Page Mill Road  
Palo Alto, CA 94304-1050  
(650) 565-3808  
Client No. 021971